



Watch County Notification (WCN) And Valid Time Event Code (VTEC) User's Guide

**A Familiarization Guide for External
Partners, Emergency Managers and the
Broadcast Media**

Operational Testing and Evaluation (OT&E)

National Weather Service
Mt Holly, NJ
<http://www.nws.noaa.gov/er/phi>

<http://www.nws.noaa.gov/om/watch>

Program Background

Tornado and Severe Thunderstorm watches are issued by the National Centers for Environmental Prediction's (NCEP) Storm Prediction Center (SPC) whenever there is a risk for tornadoes and/or severe thunderstorms across a large geographical area. Currently, watches are issued in the form of parallelograms which are drawn by forecasters at the SPC to encompass and outline the areas that are at the highest risk for severe thunderstorm development. The Watch area is further defined at the local level by National Weather Service (NWS) Weather Forecast Offices (WFO). During this process, local WFOs can add or delete counties from a defined watch area.

The current methodology and process for which severe local storms watches are issued will undergo additional changes during the 2004 season. During this time, the SPC along with a select number of WFOs will continue testing and evaluating a new system for defining severe thunderstorms and tornado watches that was initially tested during the 2003 convective season. Instead of drawing parallelograms to define watch areas, most severe local storms watches will be defined by specific counties. This new "Watch by County" process will allow for both the SPC and local WFOs to streamline the suite of products that is issued to update, cancel, replace or extend severe thunderstorm and tornado watches.

Watch By County Operational Testing and Evaluation

An operational testing and evaluation (OT&E) of the new Watch by County software will begin on August 30, 2004 and continue through October 8, 2004. This test will allow forecasters at the SPC and local WFOs to test and evaluate software that is needed to generate the experimental Watch by County products. The testing period will also allow external users of NWS products to give input on the usefulness of the new produce suite including the new Valid Time Event Code (VTEC). Pending a successful completion of the entire Watch by County process, the new suite of watch products will be expanded for experimental use at all WFOs across the continental United States.

During the Watch by County OT&E, select WFOs will issue dual set of watch products. This includes the new experimental Watch County Notification (WCN) as well as the legacy suite of WFO watch products

which includes Special Weather Statements (SPS) and the State Watch Areal Outline Product (SLS).

WFOs Participating in the WBC OT&E*

Eastern Region

Charleston, SC (CHS)
Columbia, SC (CAE)
Newport/Morehead City, NC (MHX)
Wilmington, NC (ILM)
Raleigh, NC (RAH)
Pittsburgh, PA (PBZ)%

Central Region

Pleasant Hill, MO (EAX)
Springfield, MO (SGF)
St. Louis, MO (LSX)
Wichita, KS (ICT)

Southern Region

Lake Charles, LA (LCH)
Houston/Galveston, TX (HGX)
Dallas-Ft. Worth, TX (FWD)
Norman, OK (OUN)

Western Region

Glasgow, MT (GGW)
Billings, MT (BYZ)
Great Falls, MT (TFX)
Boise, ID (BOI)

* tentative

% WCN Products generated by WFO Pittsburgh (PBZ) will not be evaluated during the WBC OT&E.

Tentative Testing Schedule of Watch By CountyOT&E

June 8-30, 2004	WBC Software Installed at OT&E Sites
July 7, 2004	Marine Zones added to WCNs and WOUs
August 30 – October 8, 2004	WBC OT&E
February 5, 2005	National WBC Implementation Date
March 8, 2005	Discontinue Legacy Watch Products

Note: all dates are subject to change

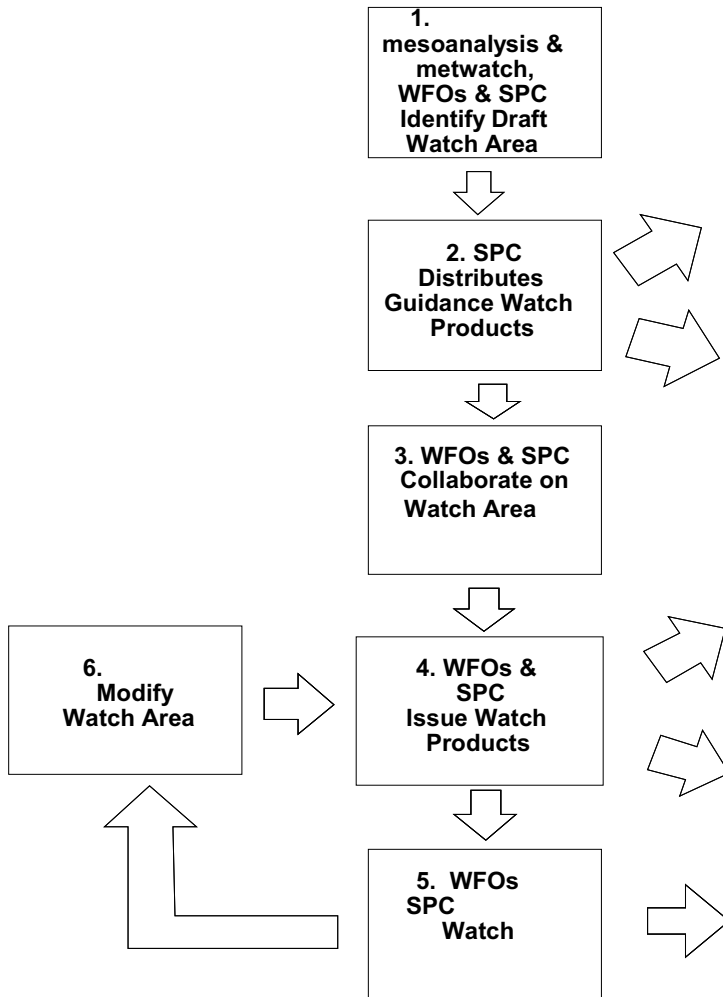
The Watch By County Process – How Does It Work?

1. The SPC issues convective outlooks and mesoscale discussions to highlight areas that are being monitored by SPC forecasters for severe thunderstorm development.
2. The SPC sends a proposed watch to WFO Watch, Warning, Advisory (WWA) software and conducts a conference call with WFOs whose county warning and forecast areas (CWFA) will be affected.
3. WFO forecasters coordinate with the SPC lead forecaster on the final list of counties and marine areas that will be included in the finalized watch area.
4. SPC issues the standard Severe Thunderstorm or Tornado Watch text products including an experimental Watch Outline Update (WOU). The WOU will contain a list of all counties in a watch area.
5. WFOs issue Watch County Notification (WCN) products listing counties in their respective CWFAs that are affected in the watch.
6. *State Liaison WFO's issue State Areal Outline (SLS) depicting counties in the watch for a particular state. Counties listed in SLS must match those listed in the WOU and WCN products.*
7. WFOs issue warnings and statements as needed.
8. SPC issues mesoscale discussions or watch update messages as needed.
9. WFOs maintain an active weather watch and issue WCN products to clear or maintain counties in an active watch area as needed.
10. *WFOs issue Special Weather Statements (SPS) to clear or maintain counties in an active watch.*
11. SPC issues an updated WOU at the top of each hour indicating which counties remain in the watch as depicted by WCN products issued by each WFO. Counties listed in the WOU and WCN messages will be the same.
12. Watch by County process repeats itself if additional watches are issued.

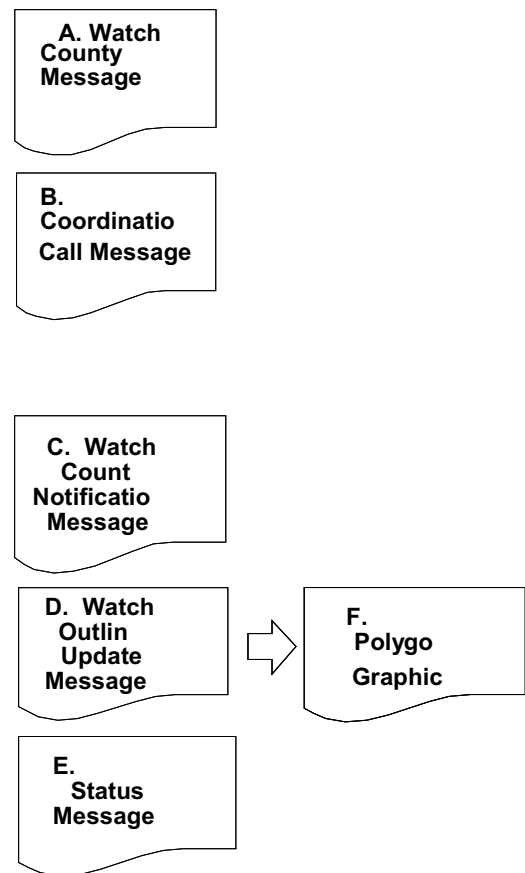
Steps 6 and 10 depict where legacy products will be utilized during the Watch by County Process. The use of the SLS and SPS will be discontinued in early 2005.

Watch By County Flow Chart

Watch By County Processes



Watch By County Products



WFO Official Legacy Products Versus Experimental Watch by County Products

The following is a list of products that will be issued by WFOs during the Watch by County OT&E Period:

<u>Product Name</u>	<u>Issued By</u>	<u>Product Description</u>
SLS – State Areal Outline*	State Liaison WFO	State that are included in a watch
SPS – Special Weather Statement*	WFO	Used to clear counties from an active watch; also used to update, cancel or extend a watch in a WFO CWFA
WCN – Watch County Notification	WFO	lists counties included in a Watch within a WFO CWFA
HWO – Hazardous Weather Outlook	WFO	Used to alert the emergency management community and the media to the potential for hazardous weather

* denotes legacy product; will be discontinued in early 2005, pending a successful test of the Watch by County process. The Special Weather Statement (SPS) product will continue to be issued for other purposes.

SPC Official Legacy Products Versus Experimental Watch by County Products

The following is a list of products that will be issued by the SPC during the Watch by County OT&E.

Product Name

SEL0-9 – Public Severe Thunderstorm/Tornado Watch

SAW0-9 – Aviation Severe Thunderstorm Watch

WOU – Watch County Update

SWODY1-3 – Convective Outlooks

SWOMCD – Mesoscale Discussions

Product Description

issued to alert the public to the potential for severe thunderstorms and/or tornadoes

issued to alert aviation interests to the potential for severe weather and/or tornadoes; included watch plotting coordinates

lists all counties within an active watch; updated at the top of each hour based on information collected from WFO WCN products

routine outlooks that address general thunderstorm severe thunderstorm potentials

issued to discuss convective trends; usually issued 1-3 hours before a possible severe local storms watch

Valid Time Event Code (VTEC)

VTEC is a new code that will be appended to most NWS products in the future. It contains more specific information about a product (actions/office/valid time) and complements the current Universal Generic Code (UGC) string found at the immediate top of non-segmented products (Severe Weather Statement) or at the beginning of each segment in segmented products (Winter Storm Warning, Special Weather Statement).

VTEC will also enable weather providers and vendors to automate and tailor the product stream delivered to their clients and allows customers to select the specific message types they want to receive. VTEC will help improve automated dissemination of weather information to the public through a myriad of methods, such as paging systems and television crawl systems used to relay urgent severe weather and flood information.

There are two types of VTEC strings; the Primary VTEC string (P-VTEC) and Hydrologic VTEC string (H-VTEC). All severe weather products will contain the P-VTEC string; only hydrologic products will utilize the H-VTEC string.

Generic P-VTEC String Format

```
/k.aaa.cccc.pp.s.####.yyymmddThhnnZB-yyymmddThhnnZE/
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How to Decode a P-VTEC String

k – Product Class

Identifies the product type.

Allowable codes:

O – Operational Product

T – Test Product

E – Experimental Product

X – Experimental Product in Operational Product

aaa – Actions

Identifies the issuance status of an Event.

Allowable codes: NEW – New Event UPG – Event Upgraded
CON – Event Continued CAN – Event Cancelled
EXP – Event Expired COR – Correction
ROU – Routine EXT – Event Extended (time)
EXA – Event Extended (area)
EXB – Event Extended (both area and time)

cccc – WFO Office Identifier

4 letter identifier of issuing WFO. For Example, KPHI, KCAE, PGUM

pp – Phenomena

Identifies the type of weather or non-weather occurrence for which the public is being alerted.

BZ Blizzard	WI Wind	AV Avalanche
WS Winter Storm	HW High Wind	TS Tsunami
WW Winter Weather	LW Lake Wind	MA Marine
SN Snow	FG Dense Fog	SC Small Craft
HS Heavy Snow	SM Dense Smoke	GL Gale
LE Lake Effect Snow	HT Heat	SR Storm
EH Excessive Heat	HF Hurricane Force Wind	UP Ice Accretion
DU Blowing Dust	BS Blowing/Drifting Snow	DS Dust Storm
TR Tropical Storm	FL Flood	HU Hurricane
SB Snow/Blowing Snow	FF Flash Flood	TY Typhoon
IP Sleet	SV Severe Thunderstorm	TI Inland TS Wind
HP Heavy Sleet	TO Tornado	HI Inland Hurricane Wind
ZR Freezing Rain	FW Fire Weather	IS Ice Storm
RH Radiological Hazard	LS Lakeshore Flood	FZ Freeze
ZF Freezing Fog	VO Volcano	CF Coastal Flood
FR Frost	WC Wind Chill	EC Extreme Cold
AF Volcanic Ash	AS Air Stagnation	LO Low Water
SU High Surf	LB Lake Effect Blowing Snow	

s – Significance

Identifies the risk level of the weather or non-weather occurrence.

Allowable codes: W – Warning Y – Advisory
A – Watch S – Statement
O – Outlook

-- Event Tracking Number

Explicitly identifies which existing watch, warning, advisory, etc is issued, continues, canceled or extended. New event tracking numbers are assigned with each new issuance of a watch, warning, advisory or statement.

yymmddThhnnZB – Event Beginning Time

Identifies when an event will become effective.

yy – year	dd – day	hh -- hour
mm – month	T – Time placeholder	nn – minute
Z _B – UGC place holder		

yymmddThhnnZE – Event Ending Time

Identifies when an event will be no longer in effect.

yy – year	dd – day	hh -- hour
mm – month	T – Time placeholder	nn – minute
Z _E – UGC place holder		

Example WCN P-VTEC Strings

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NJC005-025-029-ANZ450-451-192300-  
/E.NEW.KPHI.TO.A.0123.040519T1705Z-040519T2300Z-
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This is an Experimental WCN issued by WFO Mt Holly, NJ for a new issuance of Tornado Watch number 123. The watch is valid from 105 pm EDT (1705Z), May 19th, 2004 through 700 pm EDT (2300Z), May 19th, 2004 for Burlington, Monmouth, and Ocean Counties in New Jersey, including the adjacent coastal waters from Sandy Hook, NJ to Little Egg Inlet, NJ out 20 nautical miles.

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NJC005-192300-  
/E.CAN.KPHI.TO.A.0123.000000T0000Z-040519T2300Z-
```

This is an Experimental WCN issued by WFO Mt Holly, NJ to clear Burlington County, NJ from Tornado Watch number 123. The Tornado

Watch cancellation is effective immediately, and this WCN stating so is valid until 425 pm EDT, May 19th, 2004.

Examples of WCN and WOU Messages

Example 1 – Initial Issuance of a Watch

WWUS62 KPHI 022306
WCNPHI

EXPERIMENTAL...WATCH COUNTY NOTIFICATION FOR WATCH 148
NATIONAL WEATHER SERVICE MT HOLLY NJ
450 PM EDT SUN MAY 2 2004

THIS WATCH COUNTY NOTIFICATION PRODUCT IS AN EXPERIMENTAL PRODUCT BEING
ISSUED IN ADDITION TO OUR SEVERE WEATHER PRODUCTS.

DEC001-005-NJC001-009-011-ANZ430-431-452-453-454-455-030200-
/E.NEW.KPHI.SV.A.0148.040502T2050Z-040503T0200Z/

THE NATIONAL WEATHER SERVICE HAS ISSUED SEVERE THUNDERSTORM WATCH NUMBER 148 UNTIL 1000 PM EDT SUNDAY EVENING FOR THE FOLLOWING AREAS

IN DELAWARE

KENT SUSSEX

IN SOUTHEAST NEW JERSEY

ATLANTIC CAPE MAY CUMBERLAND

THIS WATCH INCLUDES THE FOLLOWING ADJACENT COASTAL WATERS

LITTLE EGG INLET NJ TO FENWICK ISLAND DE OUT 20 NM

DELAWARE BAY

INCLUDING THE CITIES OF...ATLANTIC CITY...BRIDGEVILLE...CAPE MAY
COURTHOUSE...DENNIS TOWNSHIP...DOVER...EAST POINT...ESTELLE
MANOR...HAMMONTON...LEWES...MILLVILLE...SMYRNA...STONE HARBOR AND WEST
CAPE MAY.

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Example 2 – Continuation of a Watch with No Counties Cleared

WWUS62 KPHI 022306
WCNPHI

EXPERIMENTAL...WATCH COUNTY NOTIFICATION FOR WATCH 148
NATIONAL WEATHER SERVICE MT HOLLY NJ
706 PM EDT SUN MAY 2 2004

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NJC001-009-011-ANZ430-431-452-453-454-455-312200-
/E.CON.KPHI.SV.A.0354.000000T0000Z-040531T2200Z/

SEVERE THUNDERSTORM WATCH 354 REMAINS VALID UNTIL 600 PM EDT MONDAY
EVENING FOR THE FOLLOWING AREAS

IN SOUTHEAST NEW JERSEY

ATLANTIC CAPE MAY CUMBERLAND

INCLUDING THE FOLLOWING ADJACENT COASTAL WATERS

LITTLE EGG INLET NJ TO FENWICK ISLAND DE OUT 20 NM

DELAWARE BAY

INCLUDING THE CITIES OF...ATLANTIC CITY...CAPE MAY COURTHOUSE...DENNIS
TOWNSHIP...EAST POINT...ESTELLE MANOR...HAMMONTON...MILLVILLE...STONE
HARBOR AND WEST CAPE MAY.

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Example 4 – WFO or SPC Cancels a Watch

WWUS62 KPHI 311851
WCNPHI

EXPERIMENTAL...WATCH COUNTY NOTIFICATION FOR WATCH 400
NATIONAL WEATHER SERVICE MT HOLLY NJ
251 PM EDT MON MAY 31 2004

THIS WATCH COUNTY NOTIFICATION PRODUCT IS AN EXPERIMENTAL PRODUCT
BEING ISSUED IN ADDITION TO OUR SEVERE WEATHER PRODUCTS.

NJC001-009-011-ANZ430-431-452-453-454-455-031950-
/E.CAN.KPHI.TO.A.0400.000000T0000Z-040531T1950Z/

THE NATIONAL WEATHER SERVICE HAS CANCELLED TORNADO WATCH 400 FOR THE
FOLLOWING AREAS. NO AREAS REMAIN WITHIN THIS WATCH.

IN SOUTHEAST NEW JERSEY

ATLANTIC CAPE MAY CUMBERLAND

INCLUDING THE FOLLOWING ADJACENT COASTAL WATERS

LITTLE EGG INLET NJ TO FENWICK ISLAND DE OUT 20 NM

DELAWARE BAY

INCLUDING THE CITIES OF...ATLANTIC CITY...CAPE MAY COURTHOUSE...DENNIS
TOWNSHIP...EAST POINT...ESTELLE MANOR...HAMMONTON...MILLVILLE...STONE
HARBOR AND WEST CAPE MAY.

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Example 5 – Multiple Watches in Effect with No County Overlap

WWUS62 KPHI 022054
WCNPHI

EXPERIMENTAL...WATCH COUNTY NOTIFICATION FOR WATCH 146
NATIONAL WEATHER SERVICE MT HOLLY NJ
453 PM EDT SUN MAY 2 2004

THIS WATCH COUNTY NOTIFICATION PRODUCT IS AN EXPERIMENTAL PRODUCT
BEING ISSUED IN ADDITION TO OUR SEVERE WEATHER PRODUCTS.

NJC001-009-011-ANZ430-431-452-453-454-455-022300-
/E.CON.KPHI.SV.A.0146.000000T0000Z-040502T2300Z/

SEVERE THUNDERSTORM WATCH NUMBER 146 REMAINS VALID UNTIL 700 PM EDT
SUNDAY EVENING FOR THE FOLLOWING AREAS

IN SOUTHEAST NEW JERSEY

ATLANTIC CAPE MAY CUMBERLAND

INCLUDING THE FOLLOWING ADJACENT COASTAL WATERS

LITTLE EGG INLET NJ TO FENWICK ISLAND DE OUT 20 NM

DELAWARE BAY

INCLUDING THE CITIES OF...ATLANTIC CITY...CAPE MAY COURTHOUSE...DENNIS
TOWNSHIP...EAST POINT...ESTELLE MANOR...HAMMONTON...MILLVILLE...STONE
HARBOR AND WEST CAPE MAY.

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DEC001-005-030200-
/E.NEW.KPHI.SV.A.0148.040502T2050Z-040503T0200Z/

THE NATIONAL WEATHER SERVICE HAS ISSUED SEVERE THUNDERSTORM WATCH
148 UNTIL 1000 PM EDT SUNDAY EVENING FOR THE FOLLOWING AREAS

IN DELAWARE

KENT SUSSEX

INCLUDING THE CITIES OF...BRIDGEVILLE...DOVER...LEWES AND SMYRNA.

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Example 6 – Multiple Watches In Effect with County Overlap

WWUS62 KPHI 022229
WCNPHI

EXPERIMENTAL...WATCH COUNTY NOTIFICATION FOR WATCH 800
NATIONAL WEATHER SERVICE MT HOLLY NJ

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Example 7 -- SPC Watch Outline Update (WOU)

WOUS64 KWNS 051631
WOU1

BULLETIN - IMMEDIATE BROADCAST REQUESTED
SEVERE THUNDERSTORM WATCH OUTLINE UPDATE FOR WS 711
NWS STORM PREDICTION CENTER NORMAN OK
1235 PM EDT THU AUG 5 2004

SEVERE THUNDERSTORM WATCH 711 IS IN EFFECT UNTIL 800 PM EDT
FOR THE FOLLOWING LOCATIONS

DEC001-003-005-060000-
/X.NEW.KWNS.SV.A.0711.040805T1635Z-040806T0000Z/

DE
. DELAWARE COUNTIES INCLUDED ARE

KENT NEW CASTLE SUSSEX
\$\$

(continued)

MDC011-015-029-035-041-060000-
/X.NEW.KWNS.SV.A.0711.040805T1635Z-040806T0000Z/

MD
. MARYLAND COUNTIES INCLUDED ARE

CAROLINE CECIL KENT
QUEEN ANNE'S TALBOT
\$\$

NJC001-005-007-009-011-015-019-021-023-025-027-029-033-035-037-041-060000-
/X.NEW.KWNS.SV.A.0711.040805T1635Z-040806T0000Z/

NJ
. NEW JERSEY COUNTIES INCLUDED ARE

ATLANTIC BURLINGTON CAMDEN
CAPE MAY CUMBERLAND GLOUCESTER

HUNTERDON MERCER MIDDLESEX
MONMOUTH MORRIS OCEAN
SALEM SOMERSET SUSSEX
WARREN
\$\$

(continued)

PAC011-017-025-029-045-077-089-091-095-101-060000-
/X.NEW.KWNS.SV.A.0711.040805T1635Z-040806T0000Z/

PA

. PENNSYLVANIA COUNTIES INCLUDED ARE

BERKS BUCKS CARBON
CHESTER DELAWARE LEHIGH
MONROE MONTGOMERY NORTHAMPTON
PHILADELPHIA
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(continued)

ANZ430-431-450-451-452-453-454-455-060000-
/X.NEW.KWNS.SV.A.0711.040805T1635Z-040806T0000Z/

CW

. ADJACENT COASTAL WATERS INCLUDED ARE

COASTAL WATERS FROM SANDY HOOK TO MANASQUAN INLET NJ OUT 20
NM

COASTAL WATERS FROM MANASQUAN INLET TO LITTLE EGG INLET NJ
OUT 20 NM

COASTAL WATERS FROM LITTLE EGG INLET TO GREAT EGG INLET NJ OUT
20 NM

COASTAL WATERS FROM GREAT EGG INLET TO CAPE MAY NJ OUT 20 NM

COASTAL WATERS FROM CAPE MAY NJ TO CAPE HENLOPEN DE OUT 20 NM

COASTAL WATERS FROM CAPE HENLOPEN TO FENWICK ISLAND DE OUT 20
NM

DELAWARE BAY
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ATTN...WFO...AKQ...BGM...CTP...LWX...OKX...PHI...

Communications Header Information for WCN/WOU

Eastern Region

WFO Charleston, SC(CHS)	WWUS62 KCHS
WFO Columbia, SC (CAE)	WWUS62 KCAE
WFO Wilmington, NC (ILM)	WWUS62 KILM
WFO Newport/Morehead City, NC (MHX)	WWUS62 KMHX
WFO Raleigh, NC (RAH)	WWUS62 KRAH
WFO Pittsburgh, PA (PBZ)	WWUS61 KPBZ

Central Region

WFO Pleasant Hill, MO (EAX)	WWUS63 KEAX
WFO Springfield, MO (SGF)	WWUS63 KSGF
WFO St. Louis, MO (LSX)	WWUS63 KLSX
WFO Wichita, KS (ICT)	WWUS63 KICT

Southern Region

WFO Lake Charles, LA (LCH)	WWUS64 KLCH
WFO Houston/Galveston, TX (HGX)	WWUS64 KHGX
WFO Dallas-Ft. Worth, TX (FWD)	WWUS64 KFWD
WFO Norman, OK (OUN)	WWUS64 KOUN

Western Region

WFO Glasgow, MT (GGW)	WWUS65 KGGW
WFO Billings, MT (BYZ)	WWUS65 KBYZ
WFO Great Falls, MT (TFX)	WWUS65 KTFX
WFO Boise, ID (BOI)	WWUS65 KBOI

Storm Prediction Center	WWUS64 KWNS
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